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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,349	08/27/2003	Gary R. Barnes	839-1434	3422
30024	7590	06/22/2004	EXAMINER	
NIXON & VANDERHYE P.C./G.E. 1100 N. GLEBE RD. SUITE 800 ARLINGTON, VA 22201			MULLINS, BURTON S	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n N .

10/648,349

X

Applicant(s)

BARNES ET AL.

Examin r

Burton S. Mullins

Art Unit

2834

-- The MAILING DATE f this c mmunication appears on the c ver sheet with the correspond nce address --

**Peri d f r Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disp sition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-26, 28 and 29 is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 6, 7, 13, 15 and 27 is/are rejected.
- 7) ☒ Claim(s) 2, 5, 8-12 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachm nt(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 03 December 2003 has been considered by the examiner.

### ***Drawings***

2. The drawings were received on 12 November 2003. These drawings are accepted.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4, 6-7, 13, 15 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (specification, pp.1-2) in view of Wiegelt et al. ("Recent Developments in Large Generator Repair Solutions and Monitoring Systems", EPRI-Generator Predictive Maintenance & Refurbishment Conference, December 2, 1998). The basic structure of a rotor with a dovetailed coil slot wall is disclosed by the prior art, including at least two axially adjacent steel wedges (see paragraphs [1]-[6] in specification, pp.1-2). Applicant's admitted prior art teaches machining away of the damaged tooth material and replacement of the steel rotor wedges with a single, full-length aluminum wedge; however, the

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prior art does not teach machining of a groove at least partly along the inwardly tapered surface of the dovetail section.

Wiegelt teaches a generator repair method in which cracks are machined out by a groove of approximately 0.1 inch radius (Figs.3&4) partly along an inwardly tapering surface of the rotor slot dovetail portion. This reduces the stresses in the axial slots of the rotors.

It would have been obvious to modify the prior art and provide machining of the cracks along an inwardly tapering surface of the rotor slot dovetail portion per Wiegelt since this would have been desirable to reduce stresses in the axial slots of the rotors.

Regarding claim 4, the groove in Wiegelt is concave.

Regarding claims 6-7, although Wiegelt teaches a 0.1 inch radius groove and not a 0.06 inch depth or 0.37 inch wide groove, per se, these would have been obvious matters of design choice dependent upon the depth of the crack which was being repaired. Further, it has been held that discovering the optimum value of a result effective variable involves only routine skill. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 13, the groove edges in Wiegelt are radiused.

Regarding claim 15, duplicating the method of Wiegelt on an opposite slot wall would have been obvious since duplication of parts, i.e., the machined groove, has been held to involve ordinary skill. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8 (7<sup>th</sup> Cir.1977).

Regarding claim 27, the rotor is inherently repaired according to the method of the prior art and Wiegelt.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art in view of Wiegelt et al. as applied to claim 1 above, further in view of

Kaminski (US 4,363,982). Applicant's admitted prior art and Wiegelt do not teach replacement of the steel wedges with aluminum wedges, per se. However, aluminum is disclosed by Kaminski as being a desirable material for wedges since it can be easily machined (c.3, lines 5-7). It would have been obvious to replace the steel wedges of applicant's admitted prior art and Wiegelt with aluminum wedges per Kaminski since aluminum would have been desirable because it would have been easily machined.

*Allowable Subject Matter*

6. Claims 2, 5, 8-12 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 2, the prior art does not teach or suggest extending the groove radially along the radial entry surface of the dovetail portion of the coil slot wall.

Regarding claim 5, in the prior art, in particular Wiegelt, the groove does not stop short of a radially inner edge of the inwardly tapering surface of the dovetail.

Regarding claim 8, the prior art, in particular Wiegelt, does not teach or suggest machining a second groove in the intermediate radial surface in an orientation transverse to the first groove.

7. Claims 16-26, 28 and 29 are allowed.

Regarding claim 16, the prior art does not teach the claimed method including, inter alia, replacing the two axially adjacent steel wedges with aluminum wedges such that the groove is centered on a butt joint between two axially adjacent replacement wedges.

Regarding claim 20, the prior art, in particular Wiegelt, does not teach or suggest the claimed method including, inter alia, machining a second groove in the intermediate radial surface in an orientation transverse to the first groove.

*Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 571-272-2034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Burton S. Mullins  
Primary Examiner  
Art Unit 2834